

Studies on Optimized Method for the Production of Rapamycin using *Streptomyces hygroscopicus*

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Abstract—Rapamycin is a high-value product finding immense use as a drug, in organ transplantation, and as a potential immunosuppressant. In attempt to increase the productivity, optimization of fermentation parameters of rapamycin production by *Streptomyces hygroscopicus* NRRL 5491 has been carried out. The low titer value of rapamycin in the original producer strain limits its applicability at industrial level. This study aims at improving the production of rapamycin by optimizing the nutrient requirements. As the carbon source we took mannose and as the nitrogen source, soyabean meal was taken. Effect of these carbon and nitrogen sources was studied. Effect of optimized medium on the *Streptomyces* growth rate as well as rapamycin production has been studied. This strategy has led to a significant increase of rapamycin production. The present study must find its application in scale-up study for industrial level production of rapamycin.